

BE IT KNOWN that I, Johannes **BURGHHAUS**, citizen of Germany, whose post office address and residence is Raibacher Tal 21, 64823 Gross-Umstadt, Germany, have invented certain new and useful improvements in an

5 **APPLICATOR FOR APPLYING AN OXIDATIVE HAIR DYE**

Of which the following is a complete specification thereof:

BACKGROUND OF THE INVENTION

The subject matter of the present invention is an applicator for applying an oxidative hair dye to human head hair. This applicator comprises two compartments including a first compartment for a hair dye composition and a
5 second compartment for an oxidizing agent and a product-dispensing area or spot for dispensing both the dye composition and the oxidizing agent.

These types of applicators are known as a two-component container in the most different forms. A peroxide solution is used as oxidizing agent. The dye composition and the oxidizing agent are present in the applicator, but are both
10 separate from each other. Shortly before using the applicator both components are mixed by pushing one of the stoppers separating the compartments out and are thus activated. A reactive hair dye results from the mixture, which is dispensed through the product-dispensing opening of the applicator on the hair to be dyed. One type of applicator of this sort is described in DE 198 12 660 A1.

15 The known applicator has the disadvantage that after activation of the applicator the entire amount of the reactive dye must be consumed within a certain comparatively short time. After that short time it is no longer usable. Removal of only a portion of the hair dye is not possible in the case of the conventional applicator. These conventional applicators are little suited to the
20 case in which only a small amount of dye is required, e.g. for hair strand dyeing.

SUMMARY OF THE INVENTION

It is an object of the present invention to further develop and improve an
5 applicator of the above-described kind so that repeated removals of partial
amounts of the hair dyeing mixture are possible within a comparatively greater
time interval.

These objects and others, which will be made more apparent hereinafter,
are attained in an applicator for applying an oxidative hair dye to human hair
10 comprising two compartments including a first compartment for a hair dye
composition, a second compartment for an oxidizing agent and a product-
dispensing area or spot for dispensing both the dye composition and the
oxidizing agent.

According to the invention a product-dispensing opening is provided in
15 each compartment and these product-dispensing openings open next to each
other.

The applicator according to the invention has the advantage that it is
suitable for repeatedly dispensing partial amounts of the hair dyeing mixture, also
within a greater time interval.

20 The product-dispensing openings of the two compartments are next to
each other so that both the oxidative hair dye and peroxide solution only come
into contact with each other outside of the applicator. Both components available
at the product-dispensing spot or area can be used e.g. for dyeing a hair strand.

Thus the product is worked or massaged into the hair strand by hand in order to achieve first a uniform mixing of the components with each other and second a uniform product distribution along the hair strand.

Since the hair dye is first activated by contact with the peroxide solution,
5 the components found within the applicator remain stable for a comparatively long time. Then a reactive mass, comprising the oxidative hair dye and the oxidizing agent, is prepared at the product-dispensing spot or area during a subsequent removal of another partial amount from the applicator.

Preferred embodiments are claimed in the appended claims and
10 described in the description provided hereinbelow.

If a liquid-permeable insert made of spongy material, bristles or a fabric, especially of felt, is provided in each product-dispensing opening, a uniform dispensing of both components in a certain volumetric ratio occurs through these inserts. However this is better achieved when the respective inserts and/or their
15 permeability is or are adjusted to the viscosities of the components flowing through them. For a direct application of the product on a strand it is advantageous that the inserts protrude beyond the product-dispensing openings to some extent, preferably from 1 to 10 mm. The protruding inserts can be used to apply, i.e. to coat or paint, the product on the hair strand.

20 In a preferred embodiment one product-dispensing opening is centrally located in the applicator and has a circular cross-section, while another outer product-dispensing opening is annular or ring-shaped and surrounds the one product-dispensing opening. The component dispensed from the inner product-

dispensing opening wets the hair strand continuously followed by the component from the outer product-dispensing opening, uniformly guided or conducted in the direction of the applicator. The applicator is held about its longitudinal axis at that angular position. In this arrangement the product-dispensing openings

5 geometrically fit a cylindrical first compartment, which is surrounded by a second compartment with an annular cross-section.

In order to be able to prevent an undesirable contact of the one component with the other component, the one compartment, e.g. the first compartment, can be formed so that it is exchangeable according to a preferred
10 embodiment. Then the filled compartments can be prepared separately from each other. By inserting a new first compartment in a remaining portion of the applicator the applicator is again ready to function. In an easily made and economical embodiment the first compartment is inserted together with its insert in its product-dispensing opening in the remaining portion of the applicator. This
15 arrangement can be used to prepare different hair dyes in different colors according to choice with the same applicator with the various first compartments inserted.

In connection with this embodiment the first compartment could be pushed into the applicator through an opening in the base of a remaining portion of the
20 applicator. A stop can be provided on the first compartment so that the first compartment rests at a desired position in the applicator. The separately prepared compartment should have a sealing member or closure exactly like the

rest of the applicator comprising only one compartment. The closure of the separate compartment is then removed prior to its insertion.

In another preferred embodiment a covering foil is provided for covering the product-dispensing spot or area. The covering foil is connected in a liquid-tight seal with the walls of the compartments, especially by welding or soldering. Because of that the components avoid drying out as well as an unintended mixing at the borders of both product-dispensing openings.

The separate compartments may be protected from drying out in a similar way when a covering foil is provided for covering each product-dispensing opening.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

The objects, features and advantages of the invention will now be illustrated in more detail with the aid of the following description of the preferred embodiments, with reference to the accompanying figures in which:

Figure 1 is a vertical cross-sectional view of a first embodiment of an applicator for dyeing hair according to the invention, which comprises an interior compartment for an oxidative hair dye, an exterior annular cross-sectioned compartment for a peroxide solution, respective felt inserts in product-dispensing openings and a protective cap;

Figure 2 is a top plan view of the applicator shown in figure 1, however without the protective cap;

Figure 3 is a vertical cross-sectional view of another embodiment of an applicator according to the invention, in which the inner compartment is exchangeable together with its felt insert;

Figure 4 is a top plan view of the applicator shown in figure 3, however
5 with a covering foil over both product-dispensing openings;

Figure 5 is a vertical cross-sectional view through a first compartment in use, in which the product-dispensing opening is closed by means of a covering foil; and

Figure 6 is a vertical cross-sectional view through a remaining portion of
10 an applicator according to the invention without the first compartment shown in Fig. 5, whose single compartment is closed by means of a covering foil.

DETAILED DESCRIPTION OF THE INVENTION

15 An applicator 1 for applying an oxidative hair dye to human head hair has two compartments 2, 3. The first compartment 2 is formed for receiving an oxidation dye and the second compartment 3 is formed for receiving a peroxide solution (figures 1 and 2). A product-dispensing spot or area 4 is provided for dispensing both the dye composition and the oxidizing agent embodied as the
20 peroxide solution. Respective product-dispensing openings 5,6 are provided for each compartment 2,3. Both product-dispensing openings 5,6 open directly beside each other into the product-dispensing space or spot 4.

Respective liquid-permeable inserts 7,8 made from felt are inserted in corresponding product-dispensing openings 5,6. These inserts 7,8 project beyond the product-dispensing openings 5,6, in fact for about 1 mm.

5 A centrally arranged product-dispensing opening 5 with a circular cross-section is provided, which is surrounded concentrically by an outer ring-shaped or annular product-dispensing opening 6. Similarly a cylindrical compartment 2 is provided, which is surrounded or enclosed by a second compartment 3 with an annular cross-section.

10 A base 9 acts as a secure stand for the applicator 1. After removal of a protective cap 10 a filled applicator 1 is moved with the protruding inserts 7,8 over hair strands to be dyed. The hair strands thus are wet both with hair dye composition from insert 7 and also with peroxide oxidizing agent from insert 8 so that a reactive hair dyeing mixture is applied to or formed on the hair strands. A uniform hair strand dyeing can be achieved by continuously moving the
15 applicator 1 along the strands. However a non-uniform, e.g. point-like or spot-like, dyeing of hair strands with the aim of achieving a certain strand pattern is also possible. Also for example respective equal sections of a hair strand, which are spaced from each other, can be dyed with the applicator 1 in order to alternate dyed and not-dyed sections of the hair strand and/or to produce a dyed
20 strip or section on the hair strand.

In one other embodiment (figure 3) the inner compartment 2 is designed to be exchangeable. It can be pushed out of the applicator 1 together with the insert 7 located in its product-dispensing opening 5. After transporting the applicator 1

with a filled second compartment 3 separate from a filled first compartment 2, the filled first compartment 2 is inserted into the remaining part of the applicator 1 through an opening 11 in a base 12 of the applicator 1. A stop 13 is provided so that the first compartment 2 cannot travel beyond its desired final position in the applicator 1.

In the embodiment of figure 4 a covering foil 18 for covering the product-dispensing spot or area 4 is provided. The covering foil 18 is connected in a liquid-tight manner with the walls 14,15 of the compartments 2,3 by means of two ring-shaped weld-joints or solder-joints 16,17 in order to prevent drying out of the products found in the compartments 2,3. A strip or tab 19 of the covering foil 18 provides a user with a better grip on the covering foil 18, in order to be able to easily remove it prior to a first use of the applicator 1.

In the embodiment according to figures 5 and 6 respective covering foils 18 are provided for covering corresponding product-dispensing openings 5,6 of compartments or chambers 2,3. While the wall 15 of the compartment 2 (Figure 5) is connected with the covering foil 18 by means of a single circumferential weld-seam or solder-seam 16, the wall 14 of the compartment 3 is sealed with the covering foil 18 by means of two concentric ring-shaped weld-seams or solder-seams 16,17 (see fig. 6). After removing both covering foils 18 the article shown in figure 5 is pushed in the article shown in figure 6 in order to provide the functioning applicator.

The disclosure in German Patent Application 103 15 550.3 of April 5, 2003 is incorporated here by reference. This German Patent Application describes the invention described hereinabove and claimed in the claims appended hereinbelow and provides the basis for a claim of priority for the instant invention
5 under 35 U.S.C. 119.

While the invention has been illustrated and described as embodied in an applicator for applying an oxidative hair dye, it is not intended to be limited to the details shown, since various modifications and changes may be made without departing in any way from the spirit of the present invention.

10 Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

15 What is claimed is new and is set forth in the following appended claims.